Amendments to the Claims:

1. (Canceled)

2. (Canceled)

3. (Canceled)

4. (Canceled)

5. (Canceled)

6. (Canceled)

7. (Canceled)

8. (Canceled)

9. (Currently amended) The ~~nucleotide affinity medium~~ alkyl-linked nucleotide non-homogeneous solid support of claim [[8]]32, wherein the solid support includes at least one member selected from the group consisting of an acrylamide, agarose, methacrylate, cellulose, nylon, silica, glass, ceramic, a magnetized particle, nitrocellulose, polystyrene, a thermoresponsive polymer, and derivatives thereof.

10. (Currently amended) The ~~nucleotide affinity medium~~ alkyl-linked nucleotide non-homogeneous solid support of claim [[9]]32, wherein the solid support is a beaded agarose.

11. (Canceled)

12. (Canceled)

13. (Canceled)

14. (Canceled)

15. (Canceled)

16. (Canceled)

17. (Canceled)

18. (Canceled)

19. (Canceled)

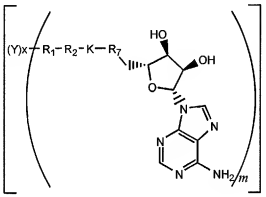
20. (Canceled)

21. (Canceled)

22. (Currently amended) The alkyl-linked nucleotide ~~composition~~ non-homogeneous solid support of claim [[1]]32, wherein the ~~nucleoside~~ 5'-nucleosidyl group is selected from the group consisting of [[an]] a –5-deoxy-5'–adenosin[[e]]yl radical, a –5-deoxy-5'–guanosinyl radical, a –5-deoxy-5'–cytidin[[e]]yl radical, a –5-deoxy-5'–thymidin[[e]]yl radical, and [[an]] a –5-deoxy-5'–uridin[[e]]yl radical, or an analog thereof.

23. (Currently amended) The alkyl-linked nucleotide ~~composition~~ non-homogeneous solid support of claim 22, wherein the ~~nucleoside~~ 5'-nucleosidyl group is [[an]] a –5-deoxy-5'–

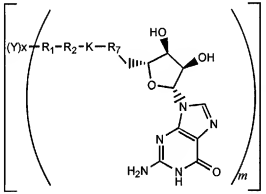
adenosin[[e]]yl radical, said alkyl-linked nucleotide ~~composition~~ non-homogeneous solid support consisting essentially of [[a]] the general structure:



II

or an ionized variant or a salt thereof.

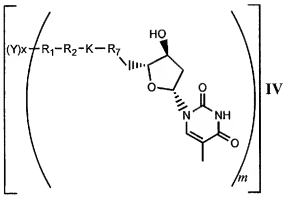
24. (Currently amended) The alkyl-linked nucleotide ~~composition~~ non-homogeneous solid support of claim 22, wherein the ~~nucleoside~~ 5'-nucleosidyl group is a –5-deoxy-5'–guanosinyl radical, said alkyl-linked nucleotide ~~composition~~ non-homogeneous solid support consisting essentially of [[a]] the general structure:



III

or an ionized variant or a salt thereof.

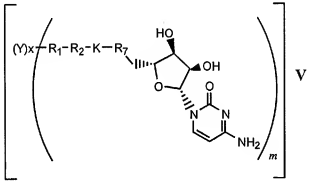
25. (Currently amended) The alkyl-linked nucleotide ~~composition~~ non-homogeneous solid support of claim 22, wherein the ~~nucleoside~~ 5'-nucleosidyl group is a –5-deoxy-5'–thymidin[[e]]yl radical, said alkyl-linked nucleotide ~~composition~~ non-homogeneous solid support consisting essentially of [[a]] the general structure:



IV

or an ionized variant or a salt thereof.

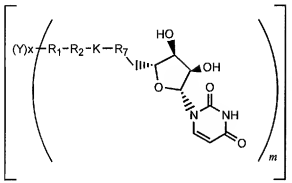
26. (Currently amended) The alkyl-linked nucleotide ~~composition~~ non-homogeneous solid support of claim 22, wherein the ~~nucleoside~~ 5'-nucleosidyl group is a –5-deoxy-5'–cytidin[[e]]yl radical, said alkyl-linked nucleotide ~~composition~~ non-homogeneous solid support consisting essentially of [[a]] the general structure:



V

or an ionized variant or a salt thereof.

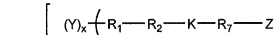
27. (Currently amended) The alkyl-linked nucleotide ~~composition~~ non-homogeneous solid support of claim 22, wherein the ~~nucleoside~~ 5'-nucleosidyl group is [[an]] a –5-deoxy-5'–uridin[[e]]yl radical, said alkyl-linked nucleotide ~~composition~~ non-homogeneous solid support consisting essentially of [[a]] the general structure:



VI

or an ionized variant or a salt thereof.

28. (Currently amended) A method for synthesizing a nucleotide affinity medium consisting essentially of [[a]] the general formula:



I

comprising the steps of:

a) coupling at least one linker to a solid support in a suitable coupling buffer, wherein said linker is R_2 or a combination of R_1 and R_2;

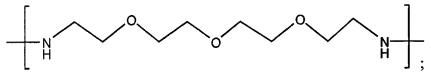
b) end-capping at least a portion of reactive sites remaining on said solid support after said coupling step; and

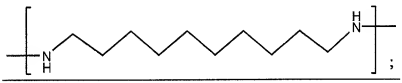
c) reacting a terminal phosphate or thiophosphate group of a nucleotide with said linker coupled to said solid support,

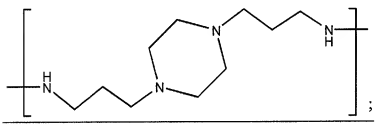
wherein Y is a solid support; x = 1; R_1 is a covalent bond between Y and R_2, or R_1 is a divalent acyl group –C(=Q)–, wherein Q is O or NH_2+[[,]] ~~a substituted or a non-substituted divalent alkyl group, a substituted or a non-substituted divalent cycloalkyl group, a substituted or a non-substituted divalent heteroalkyl group, a substituted or a non-substituted divalent heterocycloalkyl group, a substituted or a non-substituted divalent aryl group, a substituted or a non-substituted divalent heteroaryl group, or a combination thereof;~~ R_2 ~~is a substituted or a non-substituted divalent alkyl group, a substituted or a non-substituted divalent cycloalkyl group, a substituted or a non-substituted divalent heteroalkyl group, a substituted or a non-substituted divalent heterocycloalkyl, a substituted or a non-substituted divalent heteroaryl group, or a~~

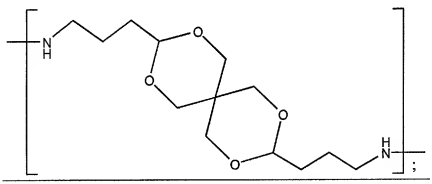
~~combination thereof;~~ K is NH; R_7 is $(P)_n$ where P is a phosphate or thiophosphate and n is at least one ~~or R_7 is a phosphate group mimic~~; Z is a 5'-nucleosidyl group or a 5'-nucleosidyl group wherein the ~~nucleoside~~ 5'-nucleosidyl group is not naturally occurring, or a derivative thereof; and m is at least one;

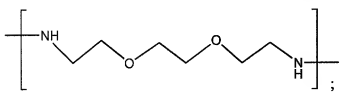
and $-R_2-K-$ is selected from the group consisting of:

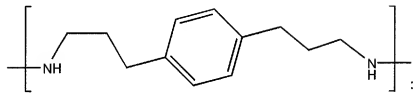


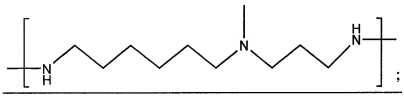


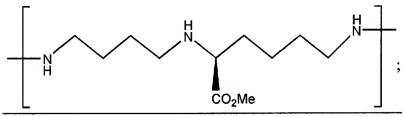


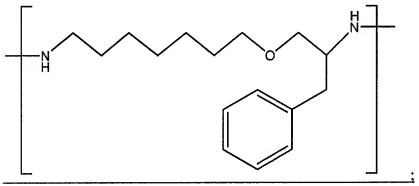


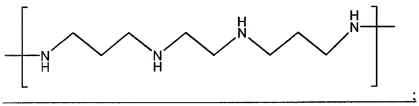


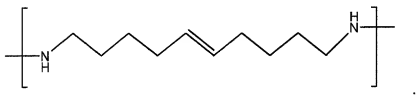

NH
N
H
:

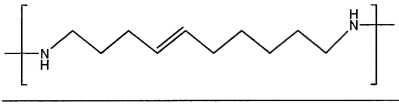

N
H
N
H
N
H
;


N
H
H
N
H
N
CO2Me
;


N
H
O
H
N
;


N
H
N
H
H
N
H
N
;


N
H
H
N
;



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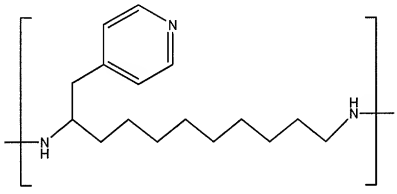

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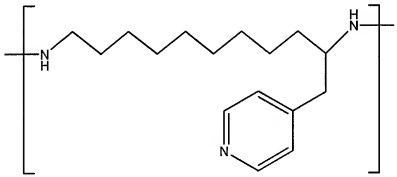
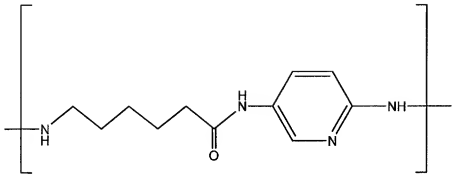


; and



; and

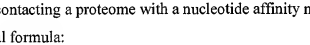
wherein the solid support has a loading of an alkyl-linked nucleotide having a range of about 20% to about 50%.

29. (Canceled)

30. (Canceled)

31. (Currently amended) A method for screening a test compound comprising the steps of:

a) contacting a proteome with a nucleotide affinity medium consisting essentially of [[a]] the general formula:

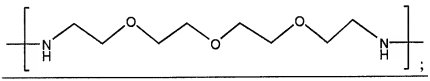


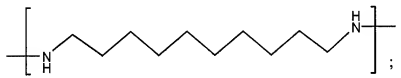
I

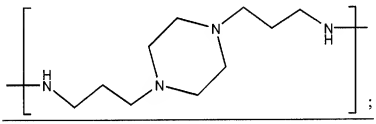
wherein Y is a solid support; x = 1; R_1 is a covalent bond between Y and R_2, or R_1 is a divalent acyl group –C(=Q)–, wherein Q is O or NH_2+, ~~a substituted or a non-substituted divalent alkyl group, a substituted or a non-substituted divalent cycloalkyl group, a substituted or a non-substituted divalent heteroalkyl group, a substituted or a non-substituted divalent heterocycloalkyl group, a substituted or a non-substituted divalent aryl group, a substituted or a non-substituted divalent heteroaryl group, or a combination thereof;~~ R_2 ~~is a substituted or a non-substituted divalent alkyl group, a substituted or a non-substituted divalent cycloalkyl group, a substituted or a non-substituted divalent heteroalkyl group, a substituted or a non-substituted~~

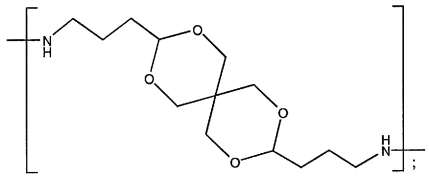
~~divalent heterocycloalkyl, a substituted or a non-substituted divalent hetereoaryl group, or a combination thereof;~~ K is NH; R_7 is $(P)_n$ where P is a phosphate or thiophosphate and n is at least ~~one or R_7 is a phosphate group mimic,~~ Z is a 5'-nucleosidyl group or a 5'-nucleosidyl group wherein the nucleoside is not naturally occurring, or a derivative thereof; and m is at least one[[.]];

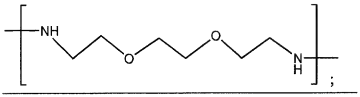
and $-R_2-K-$ is selected from the group consisting of:



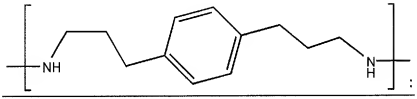




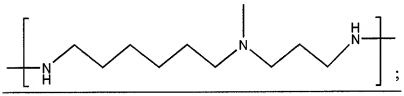



NH
O
O
N
H

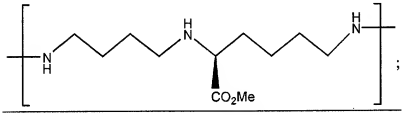
;


NH
N
H

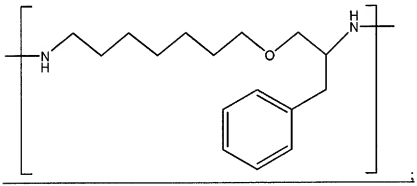
;


N
H
N
H
N

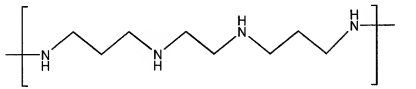
;


N
H
H
N
H
N
CO2Me

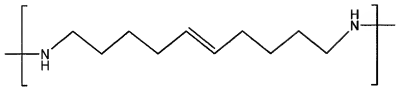
;


N
H
O
H
N

;


N
H
N
H
H
N
H
N

;



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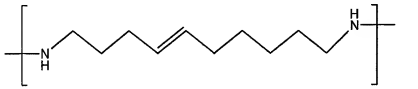

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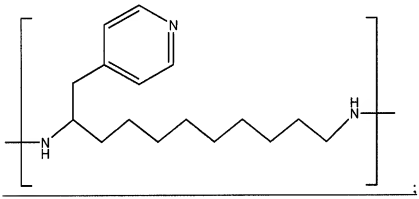

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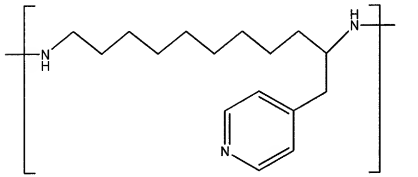
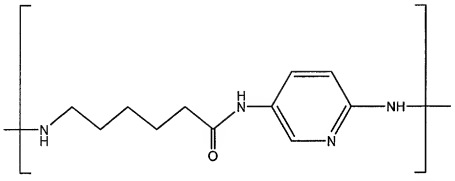


; and



; and

wherein the solid support has a loading of an alkyl-linked nucleotide having a range of about 20% to about 50%;

b) washing the nucleotide affinity medium with a buffer, whereby non-specifically bound components of the proteome are eluted from the nucleotide affinity medium and specific components of the proteome remain bound to the nucleotide affinity medium;

c) contacting the nucleotide affinity medium bound with specific components of the proteome with at least one test compound;

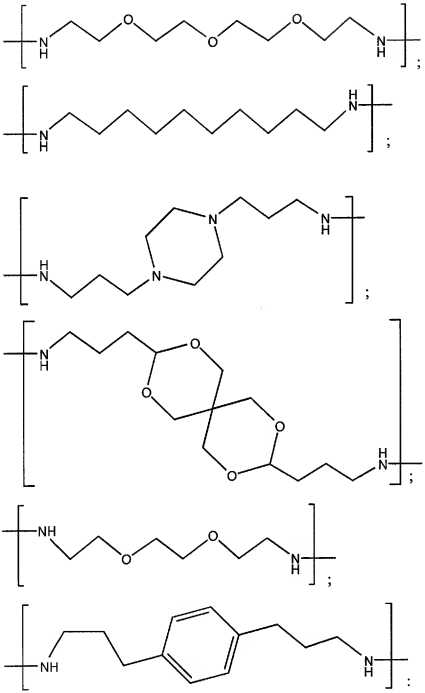
d) eluting from the nucleotide affinity medium components of the proteome that are specifically displaced by the test compound; and

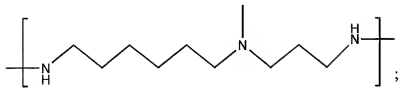
e) identifying the components of the proteome that are specifically displaced by the test compound from the nucleotide affinity medium.

32. (New) An alkyl-linked nucleotide non-homogeneous solid support consisting essentially of the general formula:

I

wherein Y is a solid support; x = 1; R_1 is a covalent bond between Y and R_2, or R_1 is a divalent acyl group –C(=Q)–, wherein Q is O or NH_2^+; K is NH; R_7 is $(P)_n$ where P is a phosphate or a thiophosphate and n is at least one; and m is at least one; Z is a 5'-nucleosidyl group or a 5'-nucleosidyl group wherein the 5'-nucleosidyl group is not naturally occurring, or a derivative thereof; and $–R_2–K–$ is selected from the group consisting of:

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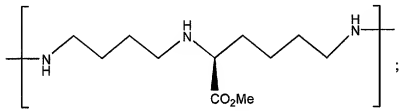
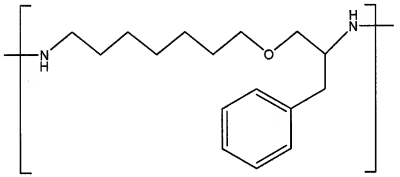

CO2Me
;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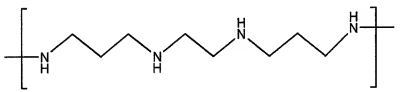
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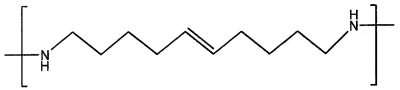
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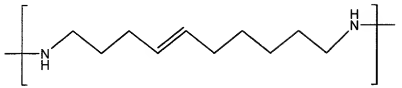
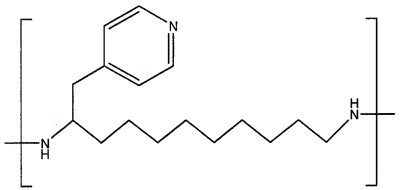


;



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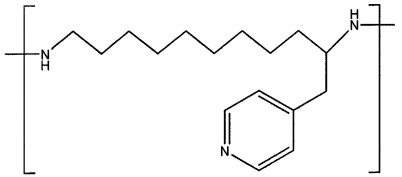
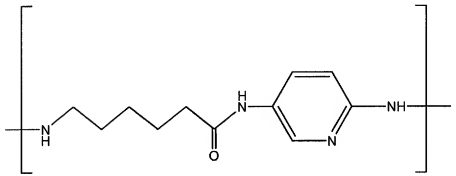


; and



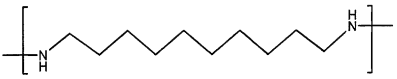
; and

wherein the solid support has a loading of an alkyl-linked nucleotide having a range of about 20% to about 50%.

33. (New) The alkyl-linked nucleotide non-homogeneous solid support of claim 32, wherein:

R_1 is $-C(=NH_2^+)-$;

R_2 is:



;

P is phosphate; and

n is 3.